

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): Weldable component of structural steel, wherein the chemical composition comprises, by weight:

$$0.10\% \leq C \leq 0.22\%$$

$$0.50\% \leq Si \leq 1.50\%$$

$$0\% < Al \leq 0.9\%$$

$$0\% \leq Mn \leq 3\%$$

$$0\% \leq Ni \leq 5\%$$

$$0\% \leq Cr \leq 4\%$$

$$0\% \leq Cu \leq 1\%$$

$$0\% \leq Mo + W/2 \leq 1.5\%$$

$$0.0005\% \leq B \leq 0.010\%$$

$$0\% < N \leq 0.025\%$$

optionally at least one element selected from V, Nb, Ta, S and Ca, at contents of less than 0.3%, and/or from Ti and Zr at contents of less than or equal to 0.5%, the remainder being iron and impurities resulting from the production operation,

the contents of aluminum, boron, titanium and nitrogen, expressed in thousandths of %, of the composition also satisfying the following relationship:

$$B \geq \frac{1}{3} \times K + 0.5, \quad (1)$$

with $K = \text{Min}(I^*; J^*)$

$I^* = \text{Max}(0; I)$ and $J^* = \text{Max}(0; J)$

$I = \text{Min}(N; N - 0.29(Ti - 5))$

$J = \text{Min}\left(N; 0.5\left(N - 0.52 \text{ Al} + \sqrt{(N - 0.52 \text{ Al})^2 + 283}\right)\right),$

the contents of silicon and aluminum of the composition also complying with the following conditions:

if $C > 0.145$, then $Si + Al < 0.95$;

whose structure is bainitic, martensitic or martensitic-bainitic and also comprises from 3 to 20% of residual austenite; and

the chemical composition also satisfies the following relationship:

$$\%Cr + 3(\%Mo + \%W/2) \geq 1.8.$$

2. (previously presented): Steel component according to claim 1, wherein chemical composition also satisfies the following relationship:

$$1.1\%Mn + 0.7\%Ni + 0.6\%Cr + 1.5(\%Mo + \%W/2) \geq 1 \quad (2)$$

3. (previously presented): Steel component according to claim 2, wherein the chemical composition also satisfies the following relationship:

$$1.1\%Mn + 0.7\%Ni + 0.6\%Cr + 1.5(\%Mo + \%W/2) \geq 2 \quad (2)$$

4. (canceled)

5. (previously presented): Steel component according to claim 1, wherein chemical composition also satisfies the following relationship:

$$\%Cr + 3(\%Mo + \%W/2) \geq 2.0.$$

6. (currently amended): Method for manufacturing a weldable steel component according to claim 1, ~~wherein comprising~~

- austenitizing the component ~~is austenitized~~ by heating at a temperature of from A_{c3} to 1000°C , and it is then cooled to a temperature of less than or equal to 200°C , in such a manner that, at the core of the component, the rate of cooling between 800°C and 500°C is greater than ~~or equal to~~ the critical bainitic velocity, and

- optionally, tempering ~~is effected~~ at a temperature of less than or equal to A_{c1} .

7. (previously presented): Method according to claim 6, wherein, at the core of the component, the cooling rate between 500°C and a temperature of less than or equal to 200°C is from 0.07°C/s to 5°C/s .

8. (currently amended): Method according to claim 6 or 7, wherein, after cooling, tempering is effected at a temperature of less than 300°C for a period of time of less than 10 hours, ~~at the end of the cooling operation to a temperature of less than or equal to 200°C .~~

9. (currently amended): Method according to claim 6 or 7, wherein no tempering is carried out ~~at the end of the cooling operation to a temperature of less than or equal to 200°C .~~

10. (currently amended): Method for manufacturing a weldable steel plate ~~according comprising the steel component according to claim 1, wherein the thickness of which the steel plate is~~ from 3 mm to 150 mm, ~~wherein comprising quenching the plate is quenched, wherein the cooling rate V_R at the core of the component between 800°C and 500°C and the composition of the steel being such that:~~

$$1.1\%\text{Mn} + 0.7\%\text{Ni} + 0.6\%\text{Cr} + 1.5(\%\text{Mo} + \%\text{W}/2) + \log V_R \geq 5.5$$

wherein V_R being in $^{\circ}\text{C}/\text{hour}$.

11. (currently amended): Method for manufacturing a weldable steel plate according to claim 10, ~~the thickness of which is from 3 mm to 150 mm, wherein, in addition, the plate is~~

~~quenched~~, the cooling rate V_R at the core of the component between 800°C and 500°C and the composition of the steel being such that:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) + \log V_R \geq 6$$

wherein V_R being in °C/hour.

12. (original): Method according to claim 6, wherein the chemical composition of the steel satisfies the following relationship:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) \geq 1 \quad (2)$$

13. (original): Method according to claim 12, wherein the chemical composition of the steel satisfies the following relationship:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) \geq 2 \quad (2)$$

14. (canceled).

15. (previously presented): Method according to claim 6, wherein the chemical composition of the steel satisfies the following relationship:

$$\% \text{Cr} + 3(\% \text{Mo} + \% \text{W}/2) \geq 2.0.$$

16. (original): Method according to claim 10, wherein the chemical composition of the steel satisfies the following relationship:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) \geq 1 \quad (2)$$

17. (original): Method according to claim 16, wherein the chemical composition of the steel satisfies the following relationship:

$$1.1\% \text{Mn} + 0.7\% \text{Ni} + 0.6\% \text{Cr} + 1.5(\% \text{Mo} + \% \text{W}/2) \geq 2 \quad (2)$$

18. (canceled).

19. (previously presented): Method according to claim 10, wherein the chemical composition of the steel satisfies the following relationship:

$$\% \text{Cr} + 3(\% \text{Mo} + \% \text{W}/2) \geq 2.0.$$